IT IS CLAIMED:

1. A method of treating a patient suffering from or at risk of suffering from loss of cardiac function by cardiac ischemia, comprising

    (a) imaging the patient's heart, or a portion thereof, to identify (i) an underperfused region of cardiac muscle, (ii) a source of oxygenated blood that is proximate a boundary of the underperfused region, and (ii) a target area that includes said underperfused region boundary and a tissue expanse lying between said oxygenated blood supply and said boundary;

    (b) at each of a plurality of sites throughout the target area, introducing a stimulus effective to stimulate angiogenesis in myocardial tissue and form a capillary network from the oxygenated blood supply to the underperfused region;

    (c) following said introducing step (b), equipping the patient with an exercise monitor that indicates the level and amount of heart exercise the patient achieves; and

    (d) requiring the patient to achieve an amount and level of heart exercise effective to stimulate the conversion of capillary blush produced by said step (b) to arterioles in the target area.

2. The method of claim 1, wherein the exercise takes place over a period of at least 4-15 weeks after said introducing step.

3. The method of claim 1, wherein the stimulus is a growth factor selected from the group consisting of fibroblast growth factor-1 (FGF-1), vascular endothelial growth factor (VEGF), platelet-derived growth factor (PDGF), insulin-like growth factor-1 (IGF-1), and combinations of two or more of these growth factors.

4. The method of claim 1, wherein the stimulus is an injury produced by a stimulus selected from the group consisting of a mechanical, laser, chemical, thermal, or ultrasonic stimulus.

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5.   The method of claim 1, wherein said exercise monitor is designed to monitor patient heart rate and to calculate the duration of exercise during which the patient's heart rate is above a selected threshold, as an indication of cardiovascular challenge.

6.   The method of claim 5, wherein said monitor stores cardiovascular challenge data for each day of use, and estimates the number of days needed to induce transformation of capillary blush produced by step (b) into arterioles.

7.   The method of claim 1, further comprising

pacing the heart with a pacemaker to achieve the amount and level of heart exercise.

8.   A monitor adapted to be worn by a patient after a surgical procedure designed to (i) identify heart regions in need of enhanced vascularization, and (ii) induce capillary blush in such regions, said monitor comprising

(a) a sensor for monitoring patient heart rate;

(b) a processor for calculating (i) the total time that the patient's heart rate is above a selected level, and (ii) the total number of days needed to induce transformation of the capillary blush into arterioles, based on the level of exercise being monitored; and

(c) a display device for displaying information calculated by the processor.

9.   The method of claim 1, wherein the equipping step is carried out within approximately 1-5 days following said introducing step (b).